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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/608,452 | 06/26/2003 | Naoyuki Enjoji | TOW-030 | 9395 |

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| EXAMINER | |
|---|---|
| MARTIN, ANGELA J | |
| **ART UNIT** | **PAPER NUMBER** |
| 1745 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
| 3 MONTHS | 01/04/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/608,452 | ENJOJI ET AL. | |
| | Examiner | Art Unit | |
| | Angela J. Martin | 1745 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *18 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/18/06;9/22/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

This Office Action is responsive to the Amendment filed on December 18, 2006. The Applicant has amended claims 1-4, 6-9, and 11-12. Although the Applicant has overcome the 35 USC 112 Rejection, by deleting the statement, without rewording the statement, the independent claims are broadened in scope by removing the limitation in question. Thus, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, this action is made final.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Bourgeois et al., U.S. Pat. No. 6,844,100 B2.

Rejection of claims 1-5, 12 drawn to a fuel cell.

Bourgeois et al., teach a fuel cell, comprising: a first stack having a plurality of unit cells; a second stack having a plurality of unit cells, the second stack being separate from the first stack (Fig. 3 and 7), wherein each of said plurality of units cells of the first and second stacks has a membrane electrode assembly including an anode, a

cathode, and a solid polymer electrolyte membrane interposed between said anode and said cathode (col. 3, lines 19-30), wherein the first stack and the second stack have reactant gas passages (Fig. 3, ref. 72, 74) and coolant passages (Fig. 3, ref. 56) defined at least partly therein and the reactant gas passages and the coolant passages are connected in series with each other across said plurality of unit cells for supplying or circulating one or more reactant gases and a coolant to said first and second stacks (Fig. 6, ref. 56); a fuel gas outlet/inlet passage connecting a fuel gas passage from the first stack with a fuel gas passage from the second stack for passing a fuel gas therethrough (Fig. 6, ref. 74 outlet, 72 inlet, stacks 1-4); and a fuel gas adjusting mechanism connected to said fuel gas outlet/inlet passage for controlling the flow rate and direction of said fuel gas (col. 8, lines 1-10). A fuel cell according to claim 1, further comprising: an oxygen-containing gas outlet/inlet passage connecting with an oxygen-containing gas passage from the first stack with an oxygen-containing gas (Fig. 3 and 7, ref. 68 inlet, 70 outlet); and an oxygen-containing gas adjusting mechanism connected to said oxygen-containing gas outlet/inlet passage for controlling the flow rate and direction of said oxygen-containing gas (col. 6, lines 12-34). A fuel cell according to claim 2, further comprising: a coolant outlet/inlet passage connecting one of said coolant passages from the first stack to one of said coolant passages from the, second stack, for passing a coolant therethrough; and a coolant adjusting mechanism connected to said coolant outlet/inlet passage for controlling the flow rate and direction of said coolant (col. 6, lines 37-38; col. 7, lines 48-62). A fuel cell according to claim I, further comprising: a coolant outlet/inlet passage connecting one of said coolant

passages from the first stack to one of said coolant passages from the second stack, for passing a coolant therethrough; and a coolant adjusting mechanism connected to said coolant outlet/inlet passage for controlling the flow rate and direction of said coolant (col. 6, lines 37-38; col. 7, lines 48-62; Fig. 3-4, ref. 56). A fuel cell according to claim I, wherein at least two of said plurality of unit cells of said first and second stacks are juxtaposed (Fig. 3 and 7). A fuel cell, comprising: a first stack having a plurality of unit cells; a second stack having a plurality of unit cells, the second stack being separate from the first stack, wherein each of said plurality of unit cells of the first and second stacks has a membrane electrode assembly including an anode, a cathode, arid a solid polymer electrolyte membrane interposed between said anode and said cathode, said first and second stacks have reactant gas passages and coolant passages defined at least partly therein and the reactant gas passages and coolant passages are connected in series with each other across said unit cells for supplying or circulating one or more reactant gases and a coolant to said first and second stacks; a coolant outlet/inlet passage connecting with said coolant passages from the first and second stacks, for passing a coolant therethrough, and a coolant adjusting mechanism for controlling the temperature and flow rate of a coolant.

Thus, the claims are anticipated.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 6-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kogami et al., JP 11-312531 (machine translation).

Rejection of claims 6-11 drawn to a method of controlling a fuel cell.

A method of controlling a fuel cell including a first stack and a separate second stack, each stack has a plurality of unit cells (abstract), each of said plurality of unit cells has a membrane electrode assembly including an anode, a cathode, and a solid polymer electrolyte membrane interposed between said anode and said cathode, said first and second stacks having reactant gas passages and coolant passages defined at least partly therein and connected in series with each other across said unit cells for supplying or circulating one or more reactant gases and a coolant to said first and second stacks (0019), said method comprising the step of: controlling a fuel gas flowing through a fuel gas outlet/inlet passage, connecting with a fuel gas passage from the first stack with a fuel gas passage from the second stack, and adjusting the temperatures and relative humidities of said first and second stacks with a fuel gas adjusting mechanism (0020). A method according to claim 6, further comprising the step of: controlling an oxygen-containing gas flowing through an oxygen-containing gas outlet/inlet passage connecting with an oxygen-containing gas passage from the first stack with an oxygen-containing gas passage from the second stack, and further adjusting the temperatures and relative humidities of said first and second stacks with an oxygen-containing gas adjusting mechanism (0037). A method according to claim 6, further comprising the step of: controlling a coolant that is one of supplied to and discharged from a coolant outlet/inlet passage connecting with said coolant passages

from the first and second stacks, and further adjusting the temperatures and relative humidities of said first and second stacks with a coolant adjusting mechanism (0046). A method according to claim 7, further comprising the step of: controlling a coolant that is one of supplied to and discharged from a coolant outlet/inlet passage connecting with said coolant passages from the first and second stacks, and further adjusting the temperatures and relative humidities of said first and second stack, with a coolant adjusting mechanism (0046-0047). A method according to claim 9, further comprising the step of: controlling said reactant gases and said coolant to operate unit cells into which said coolant is initially introduced at a startup time of said first and second stacks (0061). A fuel cell, comprising: a first stack having a plurality of unit cells; a second stack having a plurality of unit cells (abstract), the second stack being separate from the first stack, wherein each of said plurality of units of cells of the first and second stacks has a membrane electrode assembly including an anode, a cathode, and a solid polymer electrolyte membrane interposed between said anode and said cathode, said first and second stacks have reactant gas passages and coolant passages defined at least partly therein and the reactant gas passages and the coolant passages connected in series with each other across said unit cells for supplying or circulating one or more reactant gases and a coolant to said first and second stacks (0019); an oxygen-containing gas outlet/inlet passage connecting an oxygen-containing gas passage from the first stack with an oxygen-containing gas passage from the second stack, for passing an oxygen-containing gas therethrough; an oxygen-containing gas adjusting

mechanism for controlling the temperature, relative humidity, and flow rate of the oxygen-containing gas (0036-0037).

Thus, the claims are anticipated.

***Response to Arguments***

5. Applicant's arguments with respect to above claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

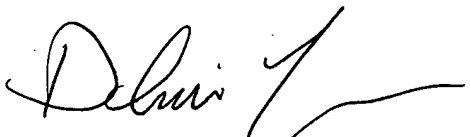
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJM



DAH-WEI YUAN
PRIMARY EXAMINER